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(54) DATA PROCESSOR AND DATA PROCESSING METHOD

(57)Abstract:

PROBLEM TO BE SOLVED: To easily extract contents data such as musical piece data from broadcast data such as radio broadcast data to enhance the convenience of viewers.

SOLUTION: The data processor receives the broadcast data, stores the received broadcast data, references a play list to extract the contents data included in the broadcast data from the stored broadcast data, and deletes the broadcast data except for the extracted contents data. Thus, the data processor can extract the contents data from the broadcast data.

CLAIMS

[Claim(s)]
[Claim 1]A data processing device comprising:
A reception means which receives broadcast data.
A preserving means which saves broadcast data received by the above-mentioned reception means.
An extraction means to extract contents data contained in this broadcast data from broadcast data saved at the above-mentioned preserving means.
An erasing means which eliminates broadcast data except contents data extracted by the above-mentioned extraction means.

[Claim 2]Have a transmitting means which transmits recording start time, record finish time, and a channel of broadcast data to record to other devices, and the above-mentioned reception means, The data processing device according to claim 1 which extracts contents data according to a play list in whom a play list according to recording start time, record finish time, and a channel which transmitted from the above-mentioned transmitting means was received from a device besides the above, and the above-mentioned reception means received the above-mentioned extraction means.
[Claim 3]The data processing device according to claim 2 with which the above-mentioned erasing means eliminates the remaining contents data except for 1 when identification data of the above-mentioned play list's contents data overlaps.
[Claim 4]A displaying means which displays identification data of contents data contained in broadcast data, The data processing device according to claim 3 which is provided with a counting means which counts a number which is carrying out [above-mentioned] the contents duplication of data and with which identification data of the above-mentioned contents data sorted according to the number of duplications which the above-mentioned counting means counted is displayed on the

above-mentioned displaying means.

[Claim 5]The data processing device according to claim 4 which eliminates contents data except identification data which was provided with a selecting means which chooses 1 or two or more identification data from two or more identification data displayed on the above-mentioned displaying means, and in which the above-mentioned erasing means was chosen by the above-mentioned selecting means.

[Claim 6]The data processing device according to claim 1 with which identification data which identifies contents data is contained in the above-mentioned broadcast data, and the above-mentioned extraction means generates a play list based on the above-mentioned identification data.

[Claim 7]The data processing device according to claim 6 with which the above-mentioned erasing means eliminates the remaining contents data except for 1 when identification data of the above-mentioned play list's contents data overlaps.

[Claim 8]A displaying means which displays identification data of contents data contained in broadcast data, The data processing device according to claim 7 which is provided with a counting means which counts a number which is carrying out [above-mentioned] the contents duplication of data and with which identification data of the above-mentioned contents data sorted according to the number of duplications which the above-mentioned counting means counted is displayed on the above-mentioned displaying means.

[Claim 9]The data processing device according to claim 8 which eliminates contents data except identification data which was provided with a selecting means which chooses 1 or two or more identification data from two or more identification data displayed on the above-mentioned displaying means, and in which the above-mentioned erasing means was chosen by the above-mentioned selecting means.

[Claim 10]The data processing device according to claim 1 with which the above-mentioned erasing means changes into an impossible state access to contents data saved at the above-mentioned preserving means as erasing operation.

[Claim 11]A data processing method which extracts contents data which receives broadcast data, saves broadcast data which received [above-mentioned], and is contained in this broadcast data from broadcast data saved [above-mentioned], and eliminates broadcast data except contents data extracted [above-mentioned].

[Claim 12]Recording start time, record finish time, and a channel of broadcast data to record are transmitted to other devices, The data processing method according to claim 11 which receives a play list according to recording start time, record finish time, and a channel which transmitted from the above-mentioned transmitting means, and extracts contents data from a device besides the above according to a play list who received [above-mentioned].

[Claim 13]The data processing method according to claim 12 which eliminates the remaining contents data except for 1 when identification data of the above-mentioned play list's contents data overlaps.

[Claim 14]The data processing method according to claim 13 which displays identification data of the above-mentioned contents data which counted a number which is carrying out [above-mentioned] the contents duplication of data, and was sorted according to the number of duplications.

[Claim 15]The data processing method according to claim 14 which chooses 1 or two or more identification data from two or more identification data displayed [above-mentioned], and eliminates contents data except selected identification data.

[Claim 16]The data processing method according to claim 11 which identification data which identifies contents data is contained in the above-mentioned broadcast data, and generates a play list based on the above-mentioned identification data.

[Claim 17]The data processing method according to claim 16 which eliminates the remaining contents data except for 1 when identification data of the above-mentioned play list's contents data overlaps.

[Claim 18]The data processing method according to claim 17 which displays identification data of the above-mentioned contents data which counted a number which is carrying out [above-mentioned] the contents duplication of data, and was sorted according to the number of duplications.

[Claim 19]The data processing method according to claim 17 which chooses 1 or two or more identification data from two or more identification data displayed [above-mentioned], and eliminates contents data except selected identification data.

[Claim 20]The data processing method according to claim 11 which changes into an impossible state access to contents data saved at the above-mentioned preserving means as the above-mentioned erasing operation.

[Claim 21]A computer program which can be processed by computer is the recorded recording medium, and the above-mentioned computer program, A recording medium containing a step which extracts contents data which receives broadcast data, saves broadcast data which received [above-mentioned], and is contained in this broadcast data from broadcast data saved [above-mentioned], and eliminates broadcast data except contents data extracted [above-mentioned].

[Claim 22]Recording start time of broadcast data which the above-mentioned computer program records, Transmit to other devices and record finish time and a channel from a device besides the above. The recording medium according to claim 21 containing a step which receives a play list according to recording start time, record finish time, and a channel which transmitted from the above-mentioned transmitting means, and extracts contents data according to a play list who received [above-mentioned].

[Claim 23]The recording medium according to claim 22 with which the

above-mentioned computer program contains a step which eliminates the remaining contents data except for 1 when identification data of the above-mentioned play list's contents data overlaps.

[Claim 24]The recording medium according to claim 23 containing a step which displays identification data of the above-mentioned contents data which the above-mentioned computer program counted a number which is carrying out [above-mentioned] the contents duplication of data, and was sorted according to the number of duplications.

[Claim 25]The recording medium according to claim 24 containing a step which the above-mentioned computer program chooses 1 or two or more identification data from two or more identification data displayed [above-mentioned], and eliminates contents data except selected identification data.

[Claim 26]The recording medium according to claim 21 which identification data which identifies contents data is contained in the above-mentioned broadcast data, and contains a step to which the above-mentioned computer program generates a play list based on the above-mentioned identification data.

[Claim 27]The recording medium according to claim 26 with which the above-mentioned computer program contains a step which eliminates the remaining contents data except for 1 when identification data of the above-mentioned play list's contents data overlaps.

[Claim 28]The recording medium according to claim 27 containing a step which displays identification data of the above-mentioned contents data which the above-mentioned computer program counted a number which is carrying out [above-mentioned] the contents duplication of data, and was sorted according to the number of duplications.

[Claim 29]The recording medium according to claim 28 containing a step which the above-mentioned computer program chooses 1 or two or more identification data from two or more identification data displayed [above-mentioned], and eliminates contents data except selected identification data.

[Claim 30]The recording medium according to claim 21 with which the above-mentioned computer program changes into an impossible state access to contents data saved at the above-mentioned preserving means as the above-mentioned erasing operation.

[Claim 31]Are a computer program which can be executed by computer and broadcast data is received, A computer program containing a step which extracts contents data which saves broadcast data which received [above-mentioned] and is contained in this broadcast data from broadcast data saved [above-mentioned], and eliminates broadcast data except contents data extracted [above-mentioned].

[Claim 32]Recording start time, record finish time, and a channel of broadcast data to record are transmitted to other devices, The computer program according to claim 31

containing a step which receives a play list according to recording start time, record finish time, and a channel which transmitted from the above-mentioned transmitting means, and extracts contents data from a device besides the above according to a play list who received [above-mentioned].

[Claim 33]The computer program according to claim 32 which contains a step which eliminates the remaining contents data except for 1 when identification data of the above-mentioned play list's contents data overlaps.

[Claim 34]The computer program according to claim 33 containing a step which displays identification data of the above-mentioned contents data which counted a number which is carrying out [above-mentioned] the contents duplication of data, and was sorted according to the number of duplications.

[Claim 35]The computer program according to claim 34 containing a step which chooses 1 or two or more identification data from two or more identification data displayed [above-mentioned], and eliminates contents data except selected identification data.

[Claim 36]The computer program according to claim 31 which identification data which identifies contents data is contained in the above-mentioned broadcast data, and contains a step which generates a play list based on the above-mentioned identification data.

[Claim 37]The computer program according to claim 36 which contains a step which eliminates the remaining contents data except for 1 when identification data of the above-mentioned play list's contents data overlaps.

[Claim 38]The computer program according to claim 37 containing a step which displays identification data of the above-mentioned contents data which counted a number which is carrying out [above-mentioned] the contents duplication of data, and was sorted according to the number of duplications.

[Claim 39]The computer program according to claim 38 containing a step which chooses 1 or two or more identification data from two or more identification data displayed [above-mentioned], and eliminates contents data except selected identification data.

[Claim 40]The computer program according to claim 31 which changes into an impossible state access to contents data saved at the above-mentioned preserving means as the above-mentioned erasing operation.

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention]This invention relates to the data processing device and method of saving the contents data contained in broadcast data.

[0002]

[Description of the Prior Art]In order to hear conventionally the contents data currently broadcast by the radio broadcast, for example, composition data, it is necessary to hear broadcast in real time. It is necessary to save a radio broadcast at recording media, such as a tape cassette and a disk cartridge, and to hear the contents of sound recording after broadcasting hours.

[0003]

[Problem(s) to be Solved by the Invention]In order for the televiewer to have recorded his own favorite composition data as for which case or to have got to know the track name, all programs needed to be heard, therefore the televiewer needed to be hearing the program and was troublesome for a long time. The televiewer needed to do an air check with a newspaper, a magazine, etc. a priori, and became troublesome.

[0004]While listening to the radio broadcast in real time, even if a televiewer is going to record composition data, it is difficult not to leak from the beginning of a musical piece and to record.

[0005]this invention is made in view of the above technical problems, and comes out. The purpose can extract the contents data of composition data etc. more easily than the broadcast data of **, and there is in providing the data processing device and method of aiming at improvement in a televiewer's convenience.

[0006]Other purposes of this invention eliminate automatically the unnecessary contents data contained in broadcast data, and there are in providing the data processing device and method of using a preserving means efficiently.

[0007]Other purposes of this invention are to provide the data processing device and method of simplifying selection of the contents data which a user saves by displaying in order of the contents data by which repetition broadcast is carried out.

[0008]Other purposes of this invention are to provide the recording medium and computer program on which the computer program which can attain the above purposes was recorded again.

[0009]

[Means for Solving the Problem]A data processing device concerning this invention is provided with the following.

A reception means which receives broadcast data that a technical problem mentioned above should be solved.

A preserving means which saves broadcast data received by reception means.

An extraction means to extract contents data contained in this broadcast data from broadcast data saved at a preserving means.

An erasing means which eliminates broadcast data except contents data extracted by

an extraction means.

[0010]A data processing method concerning this invention extracts contents data which receives broadcast data, saves received broadcast data, and is contained in this broadcast data from saved broadcast data, and eliminates broadcast data except extracted contents data.

[0011]A recording medium concerning this invention is a recording medium with which a computer program which can be processed by computer was recorded, A computer program which is recorded on this recording medium or is distributed via a network, a step which extracts contents data which receives broadcast data, saves received broadcast data, and is contained in this broadcast data from saved broadcast data, and eliminates broadcast data except extracted contents data is included -- it has.

[0012]

[Embodiment of the Invention]Hereafter, the data processing system with which this invention was applied is explained with reference to drawings.

[0013]As shown in drawing 1, the data processing system 1 is provided with the following.

The server apparatus 10 with which the play list of the composition data used by the radio program which the broadcasting station 2 broadcasts was accumulated.

The terminal unit 20 which can acquire the play list of the radio program which accessed the server apparatus 10 and he recorded.

The server apparatus 10 and the terminal unit 20 An ISDN (Integrated Services Digital Network) circuit, A CATV (Cable Television) circuit, an optical cable circuit, It is connected via the networks 3, such as xDSL (x Digital Subscriber Line), and is, Data is exchanged according to transmission protocols, such as TCP/IP (transmission control protocol/internet protocol) and FTP (file transfer protocol).

[0014]The track name of the composition data in which the server apparatus 10 was used in this data processing system 1 at the radio program, It has the play list with whom an artist name, broadcast start time, broadcast charged time, etc. were related, and when the terminal unit 20 accesses a server apparatus, the play list of a desired radio program can be acquired. And the terminal unit 20 which acquired the play list can specify now its favorite composition data, seeing a play list. [in a program] Of course, it can also use for composition data, picture image data, etc. which are used for the television program broadcast from a broadcasting station besides the composition data used for a radio program in this data processing system 1.

[0015]Next, if the server apparatus 10 which constitutes this data processing system 1 is explained with reference to drawing 2, this server apparatus 10 has the almost same composition as the usual computer with the device which the provider etc. who provide this system own. Concretely, this server apparatus 10 is provided with the following.

The receive section 11 which receives the data transmitted from the terminal unit 20 via the network 2.
The transmission section 12 which transmits data to the terminal unit 20 via the network 2.
The storage parts store 13 in which the information about the composition data used for the broadcast program is accumulated.
The input part 14 which inputs the information about the composition data used for the program broadcast by the storage parts store 13, the judgment part 15 which judges whether it is registered access from a user, and the retrieval part 16 which searches the storage parts store 13 and extracts the information about composition data according to the demand from the terminal unit 20.

[0016]The storage parts store 13 is constituted by the large hard disk, for example, The database which associated the data of each other about composition data, such as the time of the player name of the identification data of the composition data broadcast by each channel and composition data, the broadcast start time of composition data, and the broadcast end date of composition data, is built. In addition, it may be made of course, to save the songwriter name of composition data, a composer name, a record company name, etc.
[0017]The input part 14 is for inputting the data relevant to the composition data for saving at the storage parts store 13 for every composition data used for the storage parts store 13 in the broadcast program.
[0018]From the input part 14, the time of the player name of the identification data of the composition data broadcast by each channel and composition data, the broadcast start time of composition data, and the broadcast end date of composition data, etc. are inputted by a manual entry using a keyboard etc., for example.
[0019]From the input part 14, time of onset, end time, etc. it was broadcast, for example that the player name of the identification data of the composition data used in each program by speech recognition and composition data, a songwriter name, a composer name, a record company name, and composition data were are inputted. Namely, the broadcast data which the input part 14 is a radio receive section, and is broadcast by the broadcasting station 2 is received, The kind of voice data is classified into a musical piece, conversation, etc. according to speech recognition for every predetermined time, composition data is extracted from this inside, the musical feature of this composition data is evaluated, and the broadcast start time of this composition data and the time of a broadcast end date are associated and extracted. And the input part 14 accesses the musical piece database with which the identification data and the player name of composition data were related with the musical feature as which composition data was evaluated, The musical feature as which the composition data contained in broadcast data was evaluated, and the

musical feature of the composition data in the accessed musical piece database are compared. And the input part 14 extracts the identification data and the player name of composition data from a musical piece database, when the evaluated musical feature is in agreement, The identification data and the player name of composition data which were extracted from the broadcast start time of the composition data contained in broadcast data and this composition data, the time of a broadcast end date, and a musical piece database are associated, and it saves in the database of the storage parts store 13.

[0020]When the identification data of composition data and a player's identification data which are used for a program are contained in broadcast data again, the input part 14, The identification data of the composition data used for the program is extracted, the time of onset when composition data was broadcast, end time, etc. and the extracted identification data are associated, and it saves in the database of the storage parts store 13.

[0021]In this way, a database as shown in the following table 1 is built by the storage parts store 13.

[0022]

[Table 1]

チャンネル1			
楽曲ID	開始日時	終了日時	演奏家名
ABC	12/17 18:00	12/17 18:03	Tom
XYZ	12/17 18:04	12/17 18:06	Kitty
DEF	12/17 18:10	12/17 18:14	John
GHI	12/17 18:20	12/17 18:23	Bob
PPP	12/17 18:25	12/17 18:27	Smith
⋮	⋮	⋮	⋮
チャンネル2			
楽曲ID	開始日時	終了日時	演奏家名
OPQ	12/17 18:03	12/17 18:02	Ann
STU	12/17 18:05	12/17 18:08	Bill
ZZZ	12/17 18:10	12/17 18:13	John
YYY	12/17 18:21	12/17 18:23	Michael
RRR	12/17 18:26	12/17 18:29	Billy
⋮	⋮	⋮	⋮

[0023]Namely, for every channel, the identification data of composition data, broadcast start time, the time of a broadcast end date, and a player are associated, and it can be specified now as this database when the composition data used by broadcast was broadcast.

[0024]The judgment part 15 judges whether a user with access is a registered user of this system 1 based on a user's identification data transmitted from the terminal unit 20, when there is an access request from the terminal unit 20. And the judgment part 15 permits use of this system 1, when it is a registered user of this system 1, and when it is not a registered user, it notifies a purport to be registered as a user in use of this system 1.

[0025]The retrieval part 16 accesses the database of the storage parts store 13, and searches the identification data of the composition data of the time zone for which the user transmitted from the terminal unit 20 asks. And the retrieval part 16 extracts the identification data of predetermined composition data from a database, and transmits this to the terminal unit 20 from the transmission section 12.

[0026]The terminal unit 20 which is a device used for this system 1, and accesses the server apparatus 10 is provided with the following.

The receive section 21 which is a personal computer and receives the data transmitted from the server apparatus 10 via the network 3 for example, it can listen to the radio broadcast installed in a user's house as shown in drawing 3 for example.

The transmission section 22 which transmits to the server apparatus 10 via the network 3.

The radio receive section 23 which receives the broadcast data transmitted from the broadcasting station 2.

The storage parts store 24 which records broadcast data etc., the data processing part 25 which accesses the storage parts store 24, the time feed zone 26 which clocks time, the final controlling element 27 for inputting a manipulate signal, and the indicator 28 which displays the data by which data processing was carried out.

[0027]The storage parts store 24 is constituted by recording media, such as a removable disk cartridge, a tape cassette, and an IC card, to the hard disk and device main frame which were built in the device main frame, and a radio broadcast is recorded, and the composition data of a user desire used for the radio broadcast is recorded.

[0028]The data processing part 25 saves this at the storage parts store 24, if the radio receive section 23 receives the broadcast data of the channel specified by the final controlling element 27. The data processing part 25 eliminates the portion except composition data, when a desired play list is acquired from the server apparatus 10, and it eliminates duplicate composition data except for 1. As mentioned above, when the identification data of composition data and a player's identification data which are used for a program are contained in broadcast data, the data processing part 25 extracts the identification data of the composition data used for the program.

[0029]The time feed zone 26 adjusts the clock connected and built in a NTP (network time protocol) server etc., and outputs the time which the clock shows to the data processing part 25. That is, if it will record the broadcast received in the radio receive section 23 on the storage parts store 24 if the data processing part 25 becomes the recording start time inputted by the final controlling element 27, and it becomes record finish time, it will suspend recording operation.

[0030]The final controlling element 27 comprises a keyboard for inputting data, a mouse, a ten key, a trackball, a joy stick, etc., generates a manipulate signal according

to a user's operation, and outputs this to the data processing part 25. In this final controlling element 27, a character input can be performed and also selection of the channel received, for example, setting out of a timer, volume control, record of composition data, reproduction, etc. can be operated.

[0031]The indicator 28 consists of CRT (cathode-ray tube), LCD (liquid crystal display), etc., For example, the list display of the title etc. of the composition data used for the recorded radio broadcast is carried out, and a user enables it to choose desired composition data using the final controlling element 27.

[0032]Next, a series of procedures for a user to access the server apparatus 10 and acquire a play list from the terminal unit 20 are explained with reference to drawing 4. First, in Step S1, in order that the terminal unit 20 may record a radio broadcast, a timer is set up. That is, when a user operates the final controlling element 27, the channel and recording start time of the radio broadcast to record, and the time of a sound recording end date are set up, and these data is saved temporarily at the storage parts store 24. In Step S2, when it judges whether it became recording start time based on the time inputted from the time feed zone 26 and becomes recording start time, it progresses to Step S3, and the data processing part 25 repeats Step S2, when it is not recording start time. In Step S3, if the data processing part 25 becomes recording start time, it will drive the radio receive section 23 and will record the radio broadcast of the channel chosen by the user to the storage parts store 24.

[0033]In step S4, it judges whether it became at the time of a sound recording end date, when it becomes at the time of a sound recording end date, it progresses to Step S5, and when not having become at the time of a sound recording end date, the data processing part 25 repeats step S4, namely, continues sound recording operation. In Step S5, if the data processing part 25 becomes at the time of a sound recording end date, it will suspend a drive of the radio receive section 23, and will suspend the sound recording operation of a radio broadcast.

[0034]In Step S6, when a user operates the final controlling element 27, For example, when predetermined URL (uniform resource location) is inputted, the data processing part 25, Data is transmitted to the server apparatus 10 with a user's identification data from the transmission section 22 at the time of the channel data of the recorded broadcast, recording start date data, and a sound recording end date.

[0035]In Step S7, the server apparatus 10 is the receive section 11, and receives data etc. at the time of a user's identification data transmitted from the terminal unit 20, channel data, recording start date data, and a sound recording end date. Subsequently, the judgment part 15 of the server apparatus 10 is carried out based on a user's identification data transmitted from the terminal unit 20, accesses the user registration record which constitutes the database of the Records Department 13, and judges whether you are a registered user. And when it is a registered user, it progresses to Step S8, and the judgment part 15 notifies a purport to be registered as

a user, for example in use of this system 1, when it is not a registered user.

[0036]In Step S8, the retrieval part 16 of the server apparatus 10 searches by accessing the database of the storage parts store 13 and carrying out based on data at the time of the channel data transmitted from the terminal unit 20, recording start date data, and a sound recording end date. In step S9, the retrieval part 16 extracts applicable data and creates a play list as shows drawing 5.

[0037]This play list comprises broadcast start time of the composition data of the channel of the time zone which the user transmitted from the terminal unit 20 used by broadcast at least, time of an end date, and identification data of composition data so that the broadcasting hours of the broadcast composition data can be specified.

[0038]And the retrieval part 16 transmits a play list to the terminal unit 20 from the transmission section 12 in Step S10. In Step S11, if the terminal unit 20 is received in the receive section 21, it ranks second and the data processing part 25 saves a play list at the storage parts store 24.

[0039]When the identification data of composition data and a player's identification data which are used for a program are contained in broadcast data, it may be made for the terminal unit 20 to create a play list based on this identification data, as mentioned above. If this is explained with reference to drawing 6, in order that the terminal unit 20 may record a radio broadcast, a timer will be set up in Step S11. That is, when a user operates the final controlling element 27, the channel and recording start time of the radio broadcast to record, and the time of a sound recording end date are set up, and these data is saved temporarily at the storage parts store 24. In Step S12, when it judges whether it became recording start time based on the time inputted from the time feed zone 26 and becomes recording start time, it progresses to Step S13, and the data processing part 25 repeats Step S12, when it is not recording start time. In Step S13, if the data processing part 25 becomes recording start time, it will drive the radio receive section 23 and will record the radio broadcast of the channel chosen by the user to the storage parts store 24.

[0040]In Step S14, it judges whether it became at the time of a sound recording end date, when it becomes at the time of a sound recording end date, it progresses to Step S15, and when not having become at the time of a sound recording end date, the data processing part 25 repeats Step S14, namely, continues sound recording operation. In Step S15, if the data processing part 25 becomes at the time of a sound recording end date, it will suspend a drive of the radio receive section 23, and will suspend the sound recording operation of a radio broadcast.

[0041]In Step S16, the data processing part 25 extracts the identification data of the composition data contained in broadcast data. And the data processing part 25 creates a play list as shows in the above-mentioned table 2, and saves this at the storage parts store 24.

[0042]And the terminal unit 20 which acquired the play list creates the 1st

management table that associates the composition data contained in the broadcast data which he recorded, and a play list. This is explained with reference to drawing 7. For example, drawing 7 is created based on the play list who shows drawing 5. The data processing part 25 pinpoints the field where the composition data of the recorded broadcast data which is saved at the storage parts store 24 was recorded with reference to the recording start time for every composition data of the play list who shows drawing 5, and the time of an end date. That is, the data processing part 25 specifies the time zone between the recording start time for every composition data of a play list, and the time of an end date as a field where composition data was recorded, and gives the identification data of composition data to each field with reference to a play list. The data processing part 25 pinpoints the field where composition data is not recorded as a field where conversation data, commercial data, etc. are recorded.

[0043]For example, the data processing part 25 specifies the time zone of 18:00–18:03 as a time zone when composition data is broadcast, and specifies that the composition data currently recorded here is "ABC." The data processing part 25 specifies the time zone of 18:04–18:06 as a time zone when composition data is broadcast, and specifies that the composition data currently recorded here is "XYZ."

[0044]Next, the terminal unit 20 explains the procedure of extracting composition data, with reference to drawing 8 from the broadcast data memorized to the storage parts store 24. In Step S21, the data processing part 25 makes elimination the field where the composition data shown in drawing 7 is not recorded, and changes TOC (table of contents) into a state without data. It will be in the state where only the recorded composition data in broadcast data can be read by this. And the data processing part 25 creates the 2nd management table as shown in drawing 9 so that composition data can be read according to a play list. Link information is recorded for every composition data contained in the broadcast data which recorded this 2nd management table. Since the broadcast data recorded with the play list is independently memorized by the storage parts store 24, link information, It enables it to reproduce the composition data which this identification data shows by associating the identification data of composition data, and composition data, for example, choosing identification data.

[0045]In Step S22, the data processing part 25 searches the composition data currently recorded first with reference to recording start time, and it searches the composition data which ranks second to this. That is, in the example of drawing 9, the data processing part 25 carries out search extraction of top composition data "ABC" and the 2nd composition data "XYZ." In Step S23, the data processing part 25 judges whether the composition data which ranks second to this is the same as the first composition data. And when the same, it progresses to Step S24, and when not the same, he follows the data processing part 25 to Step S25.

[0046]In Step S24, when composition data overlaps, only 1 **********s the number of duplications, and the data processing part 25 makes duplicate composition data elimination, changes TOC into a state without data, and changes it into the state which cannot be read. Concretely, the data processing part 25 rewrites without a link the link information of the composition data in which the 2nd management table corresponds. As shown in drawing 10, since 18:00-18:03, and 19:00-19:03 are broadcast twice, composition data "ABC" carries out the data processing part 25 without a link of the link information of the composition data "ABC" in the direction of 19:00-19:03. And the data processing part 25 **********s the number of duplications of composition data "ABC" only 1.

[0047]In Step S25, the data processing part 25 judges whether there is any following composition data with reference to the identification data of composition data, recording start time, etc. And when there is the following composition data, it progresses to Step S26, and the data processing part 25 ends processing, when there is no following composition data.

[0048]In Step S26, if it progresses to the following composition data, the data processing part 25 will return to Step S23, and will be made to judge whether the following composition data overlaps again. That is, two or more same composition data is kept from existing in the storage parts store 24, and the data processing part 25 enables it to use the record section of the storage parts store 24 effectively.

[0049]By the way, in the above-mentioned step S24, although he is trying to count the number of duplicate composition data, this also serves as an index which shows the popular degree of composition data other than effective use of the record section of the storage parts store 24. It is because the composition data by which repetition broadcast is carried out is popular composition data in many cases. Then, in order to make easy to choose the composition data saved at the storage parts store 24, he is trying for the data processing part 25 to display the information about composition data on the indicator 28 at order with many duplications. This is explained with reference to drawing 11. In Step S31, the data processing part 25 extracts the number of duplications of each composition data, sorts it in order with many duplications, and displays this on the indicator 28 in Step S23. Here, if the screen displayed on the indicator 28 is explained with reference to drawing 12, ranking is given to order with many duplications on this screen 31 from the 1st place, and the list display of the information about composition data is carried out. The list display part 32 which carries out the list display of the information about composition data is concretely formed in Screen 31, and the identification data of composition data, broadcast start time, the time of a broadcast end date, and a player name are displayed on this list display part 32 sequentially from the 1st place for every composition data. The decision button 33 for becoming final and conclusive the composition data which the user chose is formed.

[0050]In Step S33, the data processing part 25 judges whether 1 or two or more composition data were chosen according to a user's operation. If 1 or plurality is chosen from from while the user referred to the screen displayed on the indicator 28 concretely and the list display was carried out by operating the final controlling element 27, the data processing part 25 will be set step S34, and will highlight the selected column.

[0051]In Step S35, the data processing part 25 will make data other than selected composition data elimination, i.e., the state which cannot be accessed, in Step S36, if the decision button in a screen is clicked when a user operates the final controlling element 27. That is, the data processing part 25 leaves only the composition data of a user desire to the storage parts store 24, and enables it to use the record section of the storage parts store 24 effectively by eliminating the composition data which a user did not choose, i.e., the composition data judged to be unnecessary.

[0052]According to the above systems 1, broadcast of a predetermined channel is recorded using predetermined time, for example, a timer function, Then, the play list of the composition data of a time zone who accessed the server apparatus 10 and recorded can be acquired, and only desired composition data can be saved at the storage parts store 24 using this play list. Since it is displayed on the indicator 28 in order of the composition data by which multiple-times broadcast was carried out when choosing desired composition data, the composition data which saves this ranking at the storage parts store 24 at reference can be chosen. In this system 1, since he is trying to eliminate the commercial data in the data which became unnecessary, i.e., the recorded broadcast data, conversation data, and the composition data that was not chosen, the record section of the limited storage parts store 24 can be used effectively.

[0053]By the way, software can also perform as well as performing processing of a series mentioned above which the server apparatus 10 and the terminal unit 20 perform by hardware. When software performs a series of processings, the program which constitutes the software is installed in a general-purpose personal computer, the microcomputer of one chip, etc. Drawing 13 shows the example of composition of the computer by which the program which performs a series of processings mentioned above is installed.

[0054]A program is recordable on hard disk [as a recording medium] 41, and ROM(Read Only Memory) 42 built in the computer beforehand. A program A flexible magnetic disk, CD-ROM (Compact Disc ReadOnly Memory), It is temporarily or permanently storable in the removable recording media 43, such as MO (Magneto optical) disk, DVD (Digital Versatile Disc), a magnetic disk, and semiconductor memory (record). Such a removable recording medium 43 can be provided as what is called a software package.

[0055]Install a program in a computer from the removable recording medium 43 which

was mentioned above, and also via the artificial satellite for the digital satellite broadcasting from a download site, Via networks [**** / transmitting to a computer on radio], such as LAN (Local Area Network) and the Internet, It transmits to a computer with a cable, and in a computer, it can receive in the communications department 44 and the program transmitted by making it such can be installed on the hard disk 41 to build in.

[0056]The computer contains CPU(Central Processing Unit) 45. Via the bus 46, the input/output interface 47 is connected to CPU45 and CPU45, If instructions are inputted when the input part 48 which comprises a keyboard, a mouse, etc. is operated by the user via the input/output interface 47, the program stored in ROM42 will be executed according to it.

[0057]Or a program by which CPU45 is stored in the hard disk 41, A program which was transmitted from the satellite or the network, was received in the communications department 44, and was installed on the hard disk 41, Or the program which was read from the removable recording medium 43 with which the drive 49 was equipped, and was installed on the hard disk 41 is loaded to RAM(Random Access Memory) 50, and is executed.

[0058]Thereby, CPU45 performs processing performed by the composition of the block diagram according to the flow chart mentioned above processed or mentioned above. And CPU45 makes the processing result record on transmission and also the hard disk 41 via the input/output interface 47 if needed from the output from the outputting part 51 which comprises a monitor, a loudspeaker, etc., or the communications department 44.

[0059]The processing step which describes the program for making various kinds of processings perform to a computer here, There is not necessarily the necessity of processing to a time series in accordance with the order indicated as a flow chart, and a parallel target or the processing (for example, parallel processing or processing by an object) performed individually is also included.

[0060]A program may be processed by one computer and distributed processing may be carried out by two or more computers. A program may be transmitted to a distant computer and may be executed.

[0061]

[Effect of the Invention]According to this invention, receive broadcast data and the broadcast data which received [above-mentioned] is saved, By extracting the contents data contained in this broadcast data from the broadcast data saved [above-mentioned], and eliminating the broadcast data except the contents data extracted [above-mentioned]. Only desired contents data can be extracted from broadcast data, and effective use of the record section of a preserving means can be aimed at.